UNITED STATES PATENT AND TRADEMARK OFFICE

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10/588,087	07/31/2006	Chul-Hee Lee	4900-06091729	4022

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _03 December 2009_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-24_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-24_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the estimated received data" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 3 recites the limitation "the received multimedia data" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites the limitation "the received data" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the received data" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the estimated received data" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "the received multimedia data" in line 2. There is

insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "the received data" in line 2. There is insufficient

antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Hakenburg et al. (USPN 6,792,470) in view of **Cooper et al. (USPN 20020044531)**.

Consider **claims1**, Hakenburg discloses a method of measuring transmission

quality of multimedia data, comprising the steps of: (a) a transmitter transmitting

multimedia data through a channel to a receiver in such a way that the transmitter can

estimate the multimedia data played at the receiver using information on errors

occurring during the multimedia data transmission (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; video data is transmitted from the transmitter to the receiver and the transmitter can estimate data played at the receiver using feedback NACKs); (b) the receiver receiving the multimedia data from the transmitter and transmitting, to the transmitter through a return channel, the information on errors occurring during the multimedia data transmission (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; whenever an error or a lost packet is detected a NACK feedback comprising other information is generated and transmitted to the transmitter while the errors are occurring during transmission).

While Hakenburg discloses estimating, at the transmitter, the multimedia data played at the receiver by using feedback NACKs from the receiver (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2), however, Hakenburg does not explicitly disclose estimating, at the transmitter, data at a receiver using information received from the receiver, and measuring, at the transmitter, the transmission quality of the data received by the receiver by comparing the estimated received data with reference data.

In the related field of endeavor, Cooper discloses estimating, at the transmitter, data at a receiver using information received from the receiver (see abstract; figs. 1,4,5 and associated text; [0015-0016;0029]; ICMP echo reply is received back at the transmitted and the transmitter decodes and estimates the received reply), and measuring, at the transmitter, the transmission quality of the data received by the receiver by comparing the estimated received data with reference data (see abstract; figs. 1,4,5 and associated text; [0015-0016;0029]; a transmission quality of the channel

is determined by comparing the measured echo reply signal with the transmitted echo request signal).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Hakenburg with the teachings of Cooper in order to determine communication channel quality and apply mitigating techniques to achieve a desired quality of service.

Consider **claim 12**, Hakenburg discloses an apparatus for measuring transmission quality of multimedia data, comprising: a transmitter transmitting multimedia data through a channel to a receiver in such a way that the transmitter can estimate the multimedia data played at the receiver using information on errors occurring during the multimedia data transmission (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; video data is transmitted from the transmitter to the receiver and the transmitter can estimate data played at the receiver using feedback NACKs); and the receiver receiving the multimedia data, detecting errors, which occurs in the channel, from the multimedia data, and transmitting the information on detected errors to the transmitter through a return channel (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2), wherein the transmitter comprises, an encoding unit encoding source multimedia data to encoded multimedia data (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2; whenever an error or a lost packet is detected a NACK feedback comprising other information is generated and transmitted to the transmitter while the errors are occurring during transmission).

While Hakenburg discloses estimating, at the transmitter, the multimedia data

played at the receiver by using feedback NACKs from the receiver (see abstract; col. 4,

lines 54-67; col. 5, lines 1-8; fig. 2), however, Hakenburg does not explicitly disclose

estimating, at the transmitter, data at a receiver using information received from the

receiver, and measuring, at the transmitter, the transmission quality of the data received

by the receiver by comparing the estimated received data with reference data.

In the related field of endeavor, Cooper discloses estimating, at the transmitter,

data at a receiver using information received from the receiver (see abstract; figs. 1,4,5

and associated text; [0015-0016;0029]; ICMP echo reply is received back at the

transmitted and the transmitter decodes and estimates the received reply), and

measuring, at the transmitter, the transmission quality of the data received by the

receiver by comparing the estimated received data with reference data (see abstract;

figs. 1,4,5 and associated text; [0015-0016;0029]; a transmission quality of the channel

is determined by comparing the measured echo reply signal with the transmitted echo

request signal).

Therefore, it would have been obvious to a person of ordinary skill in the art at

the time the invention was made to modify the teachings of Hakenburg with the

teachings of Cooper in order to determine communication channel quality and apply

mitigating techniques to achieve a desired quality of service.

Consider **claim 23**, Hakenburg discloses A method of measuring transmission

quality of multimedia data, comprising the steps of: (a) transmitting multimedia data

through a channel by a transmitter (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig.

2; video data is transmitted from the transmitter to the receiver and the transmitter can

estimate data played at the receiver using feedback NACKs); (b) transmitting a set of

parameters extracted from a video segment which are affected by errors occurring

during multimedia data transmission to the transmitter through a return channel by a

receiver receiving the multimedia data from the transmitter (see abstract; col. 4, lines

54-67; col. 5, lines 1-8; fig. 2; whenever an error or a lost packet is detected a NACK

feedback comprising other information is generated and transmitted to the transmitter

while the errors are occurring during transmission).

Consider **claim 24**, Hakenburg discloses an apparatus for measuring

transmission quality of multimedia data, comprising: a transmitter transmitting

multimedia data through a channel (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig.

2; video data is transmitted from the transmitter to the receiver and the transmitter can

estimate data played at the receiver using feedback NACKs); and a receiver receiving

the multimedia data, detecting errors, which occurs in the channel, from the multimedia

data, and extracting a set of parameters from a video segment which are affected by the

errors the transmitter through a return channel (see abstract; col. 4, lines 54-67; col. 5,

lines 1-8; fig. 2; whenever an error or a lost packet is detected a NACK feedback

comprising other information is generated and transmitted to the transmitter while the

errors are occurring during transmission), wherein the transmitter comprises, an

encoding unit encoding source multimedia data to encoded multimedia data (see

abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

While Hakenburg discloses estimating, at the transmitter, the multimedia data
played at the receiver by using feedback NACKs from the receiver (see abstract; col. 4,
lines 54-67; col. 5, lines 1-8; fig. 2), however, Hakenburg does not explicitly disclose
estimating, at the transmitter, data at a receiver using information received from the
receiver, and measuring, at the transmitter, the transmission quality of the data received
by the receiver by comparing the estimated received data with reference data.

In the related field of endeavor, Cooper discloses estimating, at the transmitter,
data at a receiver using information received from the receiver (see abstract; figs. 1,4,5
and associated text; [0015-0016;0029]; ICMP echo reply is received back at the
transmitted and the transmitter decodes and estimates the received reply), and
measuring, at the transmitter, the transmission quality of the data received by the
receiver by comparing the estimated received data with reference data (see abstract;
figs. 1,4,5 and associated text; [0015-0016;0029]; a transmission quality of the channel
is determined by comparing the measured echo reply signal with the transmitted echo
request signal).

Therefore, it would have been obvious to a person of ordinary skill in the art at
the time the invention was made to modify the teachings of Hakenburg with the
teachings of Cooper in order to determine communication channel quality and apply
mitigating techniques to achieve a desired quality of service.

Consider **claims 2 and 13** as applied to respective claims, Hakenburg discloses
the step (b) is performed in such a way as to transmit the error information to the

transmitter through the return channel only when a transmission error of the multimedia

data is detected (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

Consider **claims 3 and 14** as applied to respective claims, Hakenburg discloses

the step (b) comprises the step of compensating errors by applying an error

concealment technique to the received multimedia data (see abstract; col. 4, lines 54-

67; col. 5, lines 1-8; fig. 2).

Consider **claims 4 and 15** as applied to respective claims, Hakenburg discloses

the step (b) is performed in such a way as to transmit information on the employed error

concealment technique and error information to the transmitter through the return

channel (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

Consider **claims 5 and 16** as applied to respective claims, Hakenburg as

modified by Cooper discloses the step (c) is performed in such a way as to estimate the

received data using the error information, which is returned from the receiver, and the

transmitted multimedia data (see abstract; figs. 1,4,5 and associated text; [0015-

0016;0029]).

Consider **claims 6 and 17** as applied to respective claims, Hakenburg discloses

at the step (a), the transmitter encodes the multimedia data and transmits the encoded

multimedia data through the channel; and at the step (c), the transmitted multimedia

data is obtained by decoding the encoded multimedia data (see abstract; col. 4, lines

54-67; col. 5, lines 1-8; fig. 2).

Consider **claims 7 and 18** as applied to respective claims, Hakenburg as modified by Cooper discloses the reference data is the transmitted multimedia data (see abstract; figs. 1,4,5 and associated text; [0015-0016;0029]).

Consider **claim 8** as applied to respective claim, Hakenburg discloses at the step (a), the transmitter encodes the multimedia data and transmits the encoded multimedia data through the channel; and at the step (c), the transmitted multimedia data is obtained by decoding the encoded multimedia data (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

Consider **claims 9 and 19** as applied to respective claims, Hakenburg as modified by Cooper discloses the step (d) is performed in such a way as to estimate the transmission quality by using any one of a full-reference method, a reduced-reference method, and a no reference method (see abstract; figs. 1,4,5 and associated text; [0015-0016;0029]).

Consider **claims 10 and 20** as applied to respective claims, Hakenburg discloses the step of, after the step (d): (e) selectively maintaining or changing a transmission state of the multimedia data through the channel depending on the evaluation result of transmission quality (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

Consider **claims 11, 21, and 22** as applied to respective claims, Hakenburg discloses the step (e) is performed in such a way as to perform at least one of operations of terminating video transmission, increasing the channel bandwidth, employing an error correction technique, and switching to another CODEC robust

against channel errors depending on evaluation results of transmission quality so as to

change the transmission state (see abstract; col. 4, lines 54-67; col. 5, lines 1-8; fig. 2).

Conclusion

Any response to this Office Action should be **faxed to** (571) 273-8300 **or mailed**

to:

> Commissioner for Patents
> P.O. Box 1450
> Alexandria, VA 22313-1450

> **Hand-delivered responses** should be brought to

> Customer Service Window
> Randolph Building
> 401 Dulany Street
> Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Fayyaz Alam whose telephone number is (571) 270-

1102. The Examiner can normally be reached on Monday-Friday from 9:30am to

7:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's

supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number

for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for published

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Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist/customer service whose telephone

number is (571) 272-2600.

Fayyaz Alam

February 27, 2010

/Edward Urban/

Supervisory Patent Examiner, Art Unit 2618